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THE STAMENS OF *ERYTHRONIUM AMERICANUM*

BY PAUL W. GRAFF

Since the subject of genetics and heredity has become a "popular" one with both botanists and naturalists as well as zoölogists, those interested in these branches of science have come to be on the lookout for the unusual in form or color in the common things about us. Last spring, while wandering along the banks of a wooded stream in the town of Mansfield, Connecticut, I happened on such a quantity of our common yellow adder's tongue that I picked a large bunch to take home with me. On my return there chanced to be a young botanist, as yet unfamiliar with the use of keys, at the house and we started, with a copy of "Gray's New Manual," to find out what we had.

The start was easy but the end a surprise. Our plant certainly belonged neither to the Commelinaceae nor to the Pontederiaceae and yet the stamens were dissimilar. The only way to get our plant in the Lily Family was for all the stamens to be alike and this was not true of them. Our plants had their stamens in two sets of three, one set being about four fifths the length of the other, and of these the shorter seemed to show a slight tendency toward a later maturing of the pollen.

I next hunted up my copy of "Britton and Brown" with a feeling of assurance that here at least there would be no difficulty. My feeling was fully justified, for we had no difficulty in "running down" our flower with its aid. We found no mention of any difference or a similarity of the stamens in either key or species description. A surprise awaited me, however, when I looked at the illustration accompanying the description for the stamens were clearly shown as being all of one length.

As a result I began immediately to surmise that I had made the discovery of an abnormality. My interest was increased when, on examining the fifty or more blossoms I had brought in, I found them all to be similar. My curiosity being aroused, the next day I returned to the spot and examined a large quantity

of blossoms and found all to be alike. In all I must have examined at least some two hundred as I wandered down the stream. This being at the end of the season for *Erythronium* to be in bloom, I had no chance to make a comparison with plants of other localities. The results were at least interesting and I resolved to explore further the following season.

This spring, being at the New York Botanical Garden at the time these flowers should open, I had a chance to examine plants in a different locality from that of the preceding season. In my searches about the wood at Bronx Park I was rewarded by finding a number of blossoms and these were all identical in structure with the Connecticut specimens of the season before, namely, with stamens of two lengths.

Having access to a number of popular botanical books and with a curiosity to see how many would have this plant illustrated as I had found it, I proceeded to investigate. The first book I picked up was Lounsberry's "Guide to the Wild Flowers" and in the colored plate illustrating our adder's tongue, I found the stamens shown to be all of the same length. The excellent colored plates of Meehan's "Native Flowers and Ferns of the United States" were next examined and here, likewise, they could not be made out other than equal. The result was the same in the "Field Book of American Wild Flowers," by F. Schuyler Mathews. The curious fact should be noted here that while Mathews has drawn *Erythronium americanum* incorrectly as regards the stamens, on the same plate he has illustrated *E. albidum* correctly with two lengths of stamens. The only illustration found which showed the stamens of *E. americanum* to be unequal in length and similar to those I had collected was the plate in Blanchan's "Nature's Garden" which is reproduced from a photograph.

Herbarium material was next examined and this included specimens from Massachusetts south to South Carolina and west to Michigan in considerable quantity. In only one case did there appear any possibility of the stamens being of equal length. This was a specimen collected at New Brunswick, New Jersey in 1888, now in the herbarium of the New York Botanical Garden.

It appears that the usual condition in the case of *Erythronium americanum* is for the stamens to be of two distinct lengths and that a *mutation* has occurred in a number of our texts rather than in nature.

The same characteristic holds true for *Erythronium albidum* and for the two Pacific coast species, *E. citrinum* and *E. giganteum*. On the other hand it appears, as well as can be ascertained from preserved herbarium material, that *E. hendersoni*, collected in Oregon, *E. obtusatum*, collected in Montana and Idaho, and *E. parviflorum*, collected in Utah, Wyoming, Nevada and Colorado, possess stamens all of equal length.

In this case the value of a photograph over an artist's sketch for scientific purposes seems evident. A small amount of "poetic licence" is almost sure to creep in somewhere to spoil the scientific accuracy of the drawing unless a careful checking up system is followed. The continued propagation of an error is also an unfortunate incident. Such a simple fact in regard to one of our very common spring flowers, it seems, should have been recognized before. It is too often true that the common things about us are deemed beneath our attention.

That our common eastern species should differ from at least three western species in the form of their stamens seems interesting as well as the fact that two Pacific coast forms should be similar. The remaining North American species should be checked over for the stamen characters and a comparison made from various localities.

MOUNT VERNON, N. Y.

## WILD FLOWER PRESERVATION SOCIETY OF AMERICA

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\* By L. P. Jensen, Proc. 17th Annual Convention of the American Assoc. of Park Supts., San Francisco, Cal., 1915.